

### ABSTRACT

A variable frequency oscillator having multiple, independent frequency control inputs, each coupled to a respective tuning sub-circuit. The tuning sub-circuits are connected in parallel with each other and with a resonator module, which may be a quartz crystal, inductor, or other reactance component. Each tuning sub-circuit consists of two varactors with their respective cathodes coupled to each other and to their corresponding frequency control input. By having the tuning sub-circuits connected in parallel to the resonator, the overall frequency pull range of each frequency control input remains unaffected by the activation of any other frequency control input. Preferably, at least one frequency control input is a temperature compensation control input that can maintain the variable oscillator insensitive to temperature variations while the remaining frequency control inputs provide functional frequency control.